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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/560,424	04/27/00	ANH J	AT00073

024710
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WM02/0718

EXAMINER	
SEALEY, L	
ART UNIT	**PAPER NUMBER**
2671	6

DATE MAILED: 07/18/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/560,424	ANH ET AL.	
	Examiner	Art Unit	
	Lance W. Sealey	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Statutory Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new or useful process ...may obtain a patent therefor..." (emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Vogel,* 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Ockert,* 245 F.2d 467, 114 USPQ 330 (CCPA 1957).

2. A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so that they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. Claims 1-20 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-20 of copending application 09/560,052. This is a double patenting rejection.

Nonstatutory Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

5. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application, and all other rejections have been overcome. See 37 CFR 1.130(b).

6. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-9, 11-13, 15-19 and 10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21-29, 31-33, 35-39 and 40 (respectively) of copending application 09/560,052. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reason: The elements of the present application's claim 1 constitute a subset of the elements of claim 21 in 09/560,052, and claims 2-9, 11-13, 15-19 and 10, which depend directly or indirectly from claim 1, are identical to claims 22-29, 31-33, 35-39 and 40, which depend directly or indirectly from claim 21 in 09/560,424. Therefore, it would have been obvious to one of ordinary skill in the art to make the claim made in this application, because it is only a subset of what has been claimed before.

Claim Rejections - 35 USC § 102

8. The following is a quotation of 35 U.S.C. 102(e) which forms the basis for all novelty-related rejections set forth in this Office action:

A person shall be entitled to a patent unless—
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by applicant for patent.

9. Claims 1, 3, 5-6, 9 and 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Jordan et al. ("Jordan," U.S. Pat. No. 6,152,731).

10. Jordan, in disclosing methods for use in dental articulation, also discloses, with respect to claim 1, a method for integrating anatomical information from a plurality of sources of information, comprising:

- receiving two or more 3D anatomical maps sharing a common plane specified by three or more marker points common to the two or more maps (**14**, FIG.1, and Abstract, first sentence);
- placing one or more marker points on one or more teeth (**16**, FIG.1, and col.9, l.67-col.10, l.19);
- generating a digital model of the teeth with the marker points (**10**, FIG.1); and
- aligning the two or more 3D anatomical maps and the digital teeth model using the marker points (**11**, FIG.1).

11. Concerning claim 3, Jordan discloses an X-ray map (col.24, ll.35-43).

12. Regarding claim 5, Jordan discloses stereo X-ray information (Abstract, first sentence, and

col.24, ll.35-43).

13. With respect to claim 6, Jordan discloses calibrating one or more X-ray sources (col.28, ll.18-26).

14. Concerning claim 9, Jordan discloses a 3D anatomical image map (Abstract, first sentence).

15. Regarding claim 11, Jordan discloses markers (Abstract, first sentence; the specification describes a tie point as a marker on p.2, ll.25-27).

16. With respect to claim 12, Jordan discloses using discrete anatomical landmark information in the aligning process (col.9, ll.62-col.10, l.8-"three nonlinear points on each dental arch").

17. Finally, concerning claim 13, Jordan discloses displaying the aligned maps as an integrated 3D anatomical model (col.24, ll.33-53).

18. Therefore, in view of the foregoing, claims 1, 3, 5-6, 9 and 11-13 are rejected as being anticipated under 35 U.S.C. 102 by Jordan.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be

negatived by the manner in which the invention was made.

20. Claims 2, 10, 14-16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan in view of Bergersen (U.S. Pat. No. 5,882,192).

21. With respect to claim 2, Jordan disclose stereo anatomical information in the Abstract, first sentence (the upper dental arch is stereo to the lower dental arch). However, Jordan does not disclose craniofacial data; this is disclosed by the Bergersen computerized orthodontic diagnosis and appliance dispenser at the Abstract, first sentence.

22. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to use the Bergersen orthodontic dispenser in the Jordan dental articulation method. This would allow the dentist to provide a proper and complete diagnosis by allowing him or her to analyze facial symmetry, facial length, profile and lip contour, chin and nose contour and potentially other necessary aspects of the patient's face (Bergersen, col.4, ll.48-52).

23. The other claims in this rejection will now be considered: Concerning claim 10, Bergersen discloses the placing of the markers comprising wearing a dental appliance with one or more marker points at col.4, ll.39-43.

24. Regarding claim 14, Bergersen discloses wearing a dental appliance with one or more teeth markers at col.4, ll.39-43. Jordan discloses receiving X-ray information having X-ray marker information (col.24, ll.35-47), receiving a three-dimensional anatomical information having anatomical marker information (col.24, ll.35-47), aligning the X-ray information, 3D anatomical information and the 3D teeth model using the marker information (col.24, ll.35-47),

and displaying the aligned X-ray information, 3D anatomical information, and the 3D teeth model (col.8, l.54-col.9, l.6).

25. With respect to claim 15, Bergersen discloses an appliance with one or more teeth markers embedded therein at col.4, ll.39-43. Jordan discloses an X-ray camera receiving X-ray information having X-ray marker information (implied by col.24, ll.35-47), a three-dimensional digital camera receiving a three-dimensional anatomical information having anatomical marker information (implied by col.24, ll.35-47), a dental scanner to generate a three-dimensional teeth model with teeth marker information (implied by col.12, ll.3-6), and a computer to align the X-ray information, 3D anatomical information and the 3D teeth model using the marker information (col.24, ll.35-47).

26. Claim 16 is rejected according to the rationale used to reject claim 5. Claim 19 is rejected according to the rationale used to reject claim 11.

27. Finally, concerning claim 20, Bergersen discloses the appliance comprising a polymeric shell having cavities and wherein the cavities of the shell have different geometries shaped to receive teeth at **10**, FIG.1.

28. Therefore, in view of the foregoing, claims 2, 10, 14-16 and 19-20 are rejected as being unpatentable under 35 U.S.C. 103 by Jordan and Bergersen.

29. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan in view of applicants' admitted prior art.

30. Jordan does not disclose an X-ray map generated using correlated points on X-ray pairs and using y-parallax measurements. However, this element is disclosed in the applicants' admitted prior art: Wolf, Elements of Photogrammetry (specification, p.12).

31. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to use the X-ray map generation method as part of the Jordan method of dental articulation. This would aid in dental diagnoses (specification, p.12, ll.13-15).

32. Therefore, in view of the foregoing, claim 4 is rejected as being unpatentable under 35 U.S.C. 103 by Jordan and applicants' admitted prior art.

33. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan in view of Walker et al. ("Walker," U.S. Pat. No. 6,158,888).

34. Walker, in disclosing materials and methods for improved radiography, also discloses determining a principal distance from an X-ray source to a film plane at col.9, ll.48-54.

35. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to add the Walker method of improving radiography to the Jordan method. This would correct X-ray photography error which would hinder diagnosis of dental problems (Walker, col.9, ll.52-54).

36. Therefore, in view of the foregoing, claim 7 is rejected as being unpatentable under 35 U.S.C. 103 by Jordan and Walker.

37. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan in view of Burbury et al. ("Burbury," U.S. Pat. No. 5,550,891).

38. With respect to both claims, Burbury, in disclosing a positioning apparatus for an x-ray source, also discloses characterizing internal dimensions of the one or more X-ray sources by locating an X-ray film relative to an X-ray source (col.1, ll.26-30).

39. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to add the Burbury positioning apparatus to the Jordan method. This would foster flexibility in allowing the X-ray source and film to be manipulated and oriented with respect to patients of different sizes, and to allow X-rays to be taken of different parts of the body (Burbury, col.1, ll.26-30).

40. Therefore, in view of the foregoing, claim 8 is rejected as being unpatentable under 35 U.S.C. 103 by Jordan and Burbury.

41. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan in view Bergersen and further in view of Meccariello (U.S. Pat. No. 4,980,905).

42. Jordan does not disclose a calibration array to calibrate the X-ray camera. This is disclosed in the Meccariello X-ray imaging apparatus dose calibration method at the Abstract, third sentence.

43. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to add the Meccariello method to the Jordan-Bergersen method. This would

enable a more accurate diagnosis of dental illnesses by enabling the user to account for variations in the characteristics of system components such as the image intensifier, the video camera, and the X-ray tube (Meccariello, col.2, ll.8-12).

44. Accordingly, in view of the foregoing, claim 17 is rejected as being unpatentable under 35 U.S.C. 103 by Jordan, Bergersen and Meccariello.

45. Finally, claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan in view of Bergersen and further in view of Burbury.

46. Neither Jordan nor Bergersen disclose an X-ray cassette carrier. However, Burbury discloses this element at col.1, ll.26-30.

47. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to include the X-ray cassette carrier apparatus in the Jordan-Bergersen method. This would allow the X-ray source and film to be manipulated and oriented with respect to patients of different sizes and to allow X-rays to be taken of different parts of the body (Burbury, col.1, ll.26-30).

48. Accordingly, in view of the foregoing, claim 18 is rejected as being unpatentable under 35 U.S.C. 103 by Jordan, Bergersen and Burbury.

Conclusion

49. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lance Sealey whose telephone number is (703) 305-0026. The examiner can normally be reached Monday-Friday from 7:00 am to 3:30 pm EDT.

50. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached on (703) 305-9798. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

51. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700 or the Customer Service Office at (703) 306-0377.

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